

have resulted in the transmission of *Ewingella americana* strains from animal or non-animal reservoirs [12,13], whereas solutions used to flush catheters are an equally well-known source of potential bacterial contamination. Unfortunately, these vials could no longer be traced.

We conclude that *Ewingella americana* remains a rare cause of infection in humans. More information on its ecology, epidemiology and pathogenicity is needed.

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Vibrio alginolyticus acute gastroenteritis: report of two cases

The genus *Vibrio* includes more than 30 species, 12 of which are human pathogens or have been isolated from human clinical specimens. These organisms may be classified as halophilic or non-halophilic on the basis of their requirement of NaCl for optimal growth. More recently, attention has been focused on the halophilic vibrios, *V. vulnificus*, *V. parahaemolyticus*, and *V. alginolyticus*, and their relationship to disease, because halophilic vibrios are increasingly recognized as important intestinal and extraintestinal pathogens. Infections due to halophilic vibrios are generally acquired through ingestion of contaminated shellfish or seafood or by direct invasion through wounds. However, in contrast to the others, *V. alginolyticus* has infrequently been isolated from human infections despite its widespread saprophytic existence in coastal waters [1].

Most of the clinical isolates of *V. alginolyticus* have been isolated from patients with extraintestinal infections such as otitis or cellulitis [2–5], and this organism has rarely been reported as a cause of diarrhea [6–10]. We isolated *V. alginolyticus* from the stools of two women who complained of abdominal pain and diarrhea. Considering the paucity of such reports, we therefore consider two cases to be of interest.

The first case was a 23-year-old female who visited the emergency room of Wonju Christian Hospital, Wonju, on 28 September 1998, because of abdominal pain and diarrhea. According to her history, she had been diagnosed with hepatitis B viral infection 3 years previously. On the morning of the day of admission, she had eaten raw crab preserved in soy sauce at home, and later that afternoon, she began to complain of abdominal pain and discomfort accompanied by yellowish, watery diarrhea. She mentioned that her husband presented similar but milder symptoms. On presentation to the emergency room, she was afebrile and was normal on physical examination. Samples for routine laboratory tests, and blood and rectal swab specimens for microbiological study, were taken, and then symptomatic treatment for the diarrhea was administered.

Laboratory data from samples taken in the emergency room revealed a total WBC count of 6500/μL with a normal differential count; serum electrolytes and routine blood chemistry values were within normal ranges; urinalysis showed no proteinuria or hematuria. Parasites, including amoeba, were not found in the feces. The patient was discharged approximately 1 day after admission because she was in a good state of health without diarrhea or abdominal pain. No organisms were detected from three sets of aerobic and anaerobic blood cultures. In order to isolate enteric pathogens, the patient's stool was

processed according to the routine procedure for this type of sample.

Colonies grown from the stool culture were colorless on MacConkey agar, β -hemolytic on blood agar, and yellow on TCBS agar. The isolate was a slightly curved, oxidase-positive Gram-negative bacillus. Kligler's iron agar (KIA) reactions were alkaline slant, acid butt, negative gas and H_2S . Motility, indole and ornithine decarboxylase were all positive on motility indole ornithine medium. The Simmons citrate reaction was positive after 2 days of incubation. The Voges-Proskauer and methyl red reaction were also positive. API 20 E and ID 32 GN systems (bioMérieux SA, Marcy l'Etoile, France) identified the isolate as *V. alginolyticus* (probabilities 98.7% (bionumber 4046125) and 96.7% (bionumber 66023004203), respectively). The isolate was resistant to ampicillin and susceptible to tetracycline, chloramphenicol and co-trimoxazole by disk diffusion test [11].

The second case was a 52-year-old female who presented to the emergency room of Wonju Christian Hospital, on 12 October 1998, because of abdominal pain, vomiting, and diarrhea. Her past medical history was unremarkable except for treatment for pulmonary tuberculosis about 30 years ago. One day prior to admission, she had gone to a party where she ingested a variety of food and drink, and then about half a day later, chills, fever, abdominal pain, and diarrhea developed. On the day of admission, she had had four or five episodes of watery, brownish diarrhea. On arrival at the emergency room, her temperature was 37.8 °C, and the other vital signs were within normal ranges. On physical examination, she appeared acutely ill, but, except for increased bowel sounds and mild abdominal tenderness, no abnormal findings were noted. The initial hematologic findings were: hemoglobin 14.1 g/dL, hematocrit 44.5%, and WBC count 9950/ μ L with a differential count of 82% neutrophils, 15% lymphocytes, and 3% monocytes. The platelet count was 200 000/ μ L. The stool hemoglobin concentration by latex agglutination test was 194 ng/mL (reference range: <100 ng/mL). Routine blood chemistry and urinalysis were not remarkable. Parasites, including amoeba, were not found. None of three blood cultures were positive. From a stool culture grown on MacConkey agar and TCBS agar plate, oxidase-positive Gram-negative bacilli were obtained, and they were later identified as *V. alginolyticus*. On the second day of admission, the patient had two episodes of watery diarrhea accompanied by abdominal pain. On the third hospital day, she was discharged with complete recovery. The results of conventional biochemical reactions and the antimicrobial susceptibility of the isolate were identical to those of the isolate of case 1, with the exception of the citrate reaction. The API 20 E system identified the microorganism as *V. alginolyticus* (profile number 4146125; probability 97.7%; T-index 0.81).

The disease spectrum and epidemiology of halophilic vibrios are somewhat different despite their similar biochemical reactions, natural habitat, and growth conditions [3,5,12]. Also, the

incidence and prevalent species of halophilic vibrio infections might be somewhat different according to geographic variations and differences in lifestyle [2,3]. The occurrence of infections attributed to halophilic vibrios depends mainly on the temperature of the coastal water, because higher temperatures promote a higher count of vibrios [1]. Although *V. alginolyticus* is widely distributed in coastal waters in many parts of the world and is recovered in numbers higher than for other halophilic vibrios from seawater as well as from marine animals [4], this organism has only rarely been associated with acute diarrheal illness. These findings suggest the possibilities that exposure to and colonization with *V. alginolyticus* are commoner than previously recognized, and that the lower prevalence of *V. alginolyticus* infection may be due to the low pathogenicity of this organism for humans and short duration of diarrhea.

Since the symptoms of *V. alginolyticus* diarrhea are mild, and patients recover spontaneously or with supportive care, antimicrobial therapy is not required in immunocompetent patients.

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